

Service Manual

PIONEER
The Art of Entertainment



ORDER NO.
ARP2891

FM/AM DIGITAL-SYNTHESIZER TUNER

F-204RDS

THIS MANUAL IS APPLICABLE TO THE FOLLOWING MODEL(S) AND TYPE(S).

Type	Model	Power Requirement	The voltage can be converted by the following method.
	F-204RDS		
HEXK	○	AC 220-230V	AC240V, *
HBWXX	○	AC230V	AC240V, *
HEWZXX	○	AC220-230V	AC240V, *
HEWIXK	○	AC220-230V	AC240V, *

* : Alter the wiring of the Power-supply block at the primary winding of Power-transformer referring to the "Line Voltage Selection" described in Service Manual.

●For HBWXX, HEWZXX and HEWIXK types, refer to page 27.

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1. EXPLODED VIEWS, PACKING AND PARTS LIST

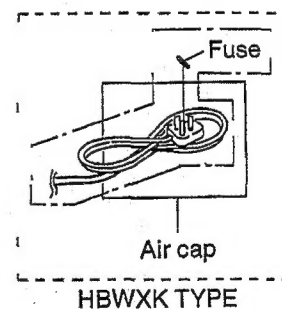
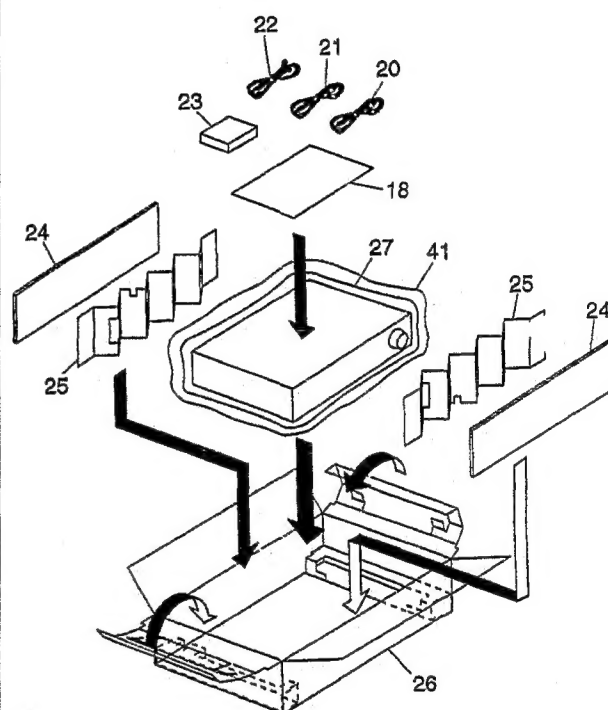
NOTES:

- Parts marked by "NSP" are generally unavailable because they are not in our Master Spare Parts List.
- The Δ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.
- Parts marked by "●" are not always kept in stock. Their delivery time may be longer than usual or they may be unavailable.

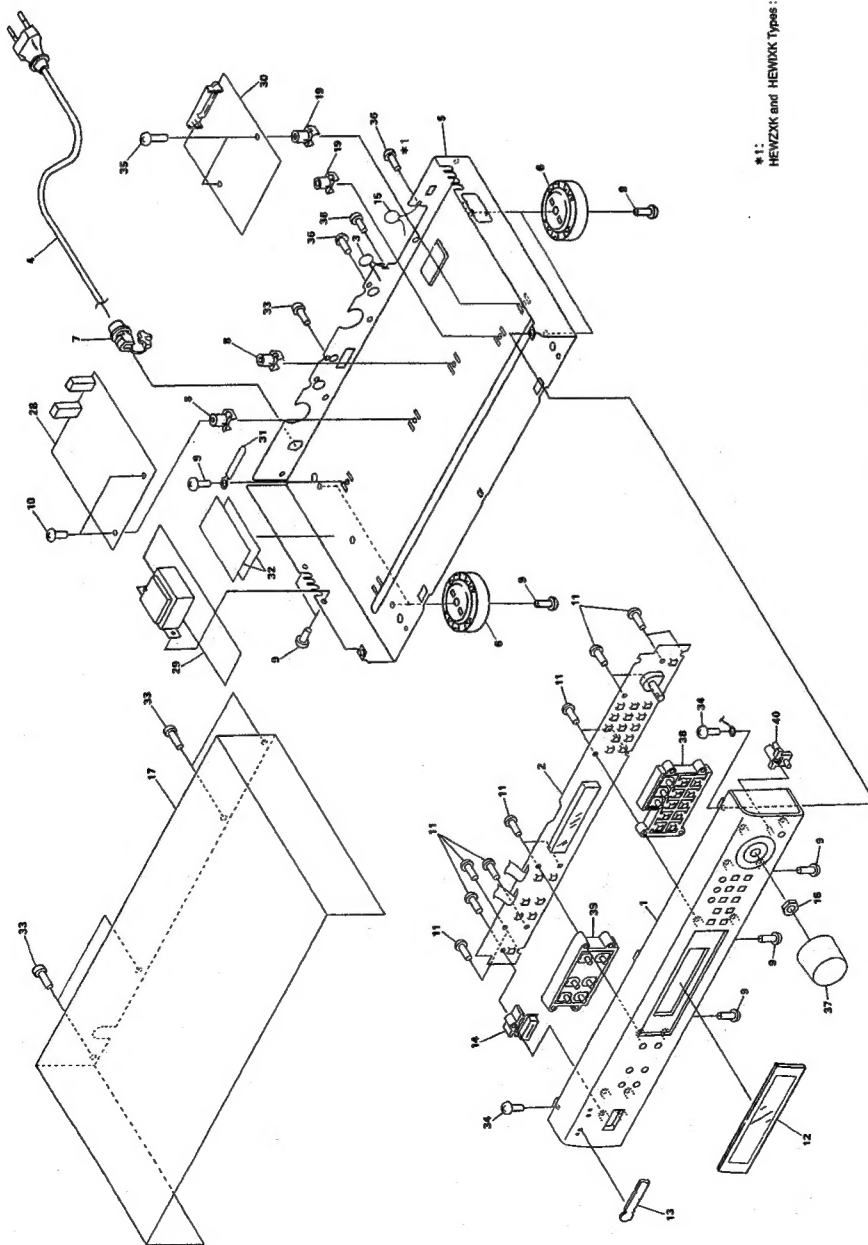
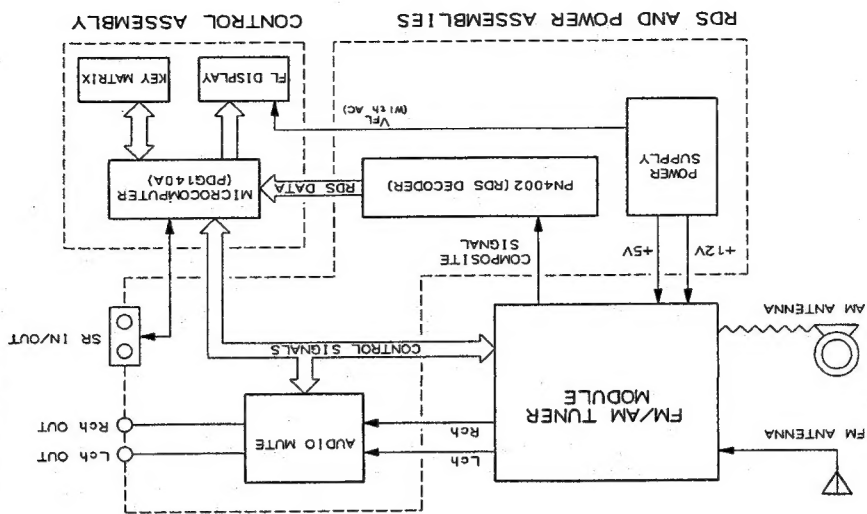
PARTS LIST (for F-204RDS/HEXK)

Mark	No.	Description	Parts No.
	1	FRONT PANEL (PLS)	AMB7241
	2	CONTROL ASS'Y	AWZ7714
	3	C1 CERAMIC CAPACITOR	CCDSL221J50
Δ	4	AC POWER CORD	ADG1138
	5	CHASSIS (MET)	ANA1478
	6	INSULATOR	PNW1912
Δ	7	STRAIN RELIEF	AEC-882
NSP	8	PCB MOULD	AMR1525
	9	SCREW	ABA-298
	10	SCREW	ABA1018
	11	SCREW	BPZ26P080FMC
	12	FL PANEL (PLS)	AAK7132
	13	NAME PLATE	PAM1608
	14	POWER BUTTON (ABS)	AAD2425
	15	C2 CERAMIC CAPACITOR	CKDYB102K50
	16	NUT	NK70FUC
	17	BONNET(FE)	ANE7058
	18	OPERATING INSTRUCTIONS (English/French/German/Italian/ Swedish/Dutch/Spanish/Portuguese)	ARE7031
NSP	19	PCB MOULD	AMR2115
	20	CORD WITH PLUG	PDE1249
	21	CORD WITH PLUG	PDE1095
	22	FM ANTENNA	ADH7001
	23	LOOP ANTENNA	ATB7001
	24	SPACER (PAP)	AHA7058
	25	SPACER (PAP)	AHA7074
	26	PACKING CASE	AHD7133
	27	PACKAGING SHEET	AHG1107
	28	RDS ASS'Y	AWZ7711
NSP	29	POWER ASS'Y	AWZ7709
	30	FM/AM TUNER MODULE	AXQ7040
	31	BINDER	AEP-215
NSP	32	BARRIER	AEC1416
	33	SCREW (STEEL)	ABA1006
	34	SCREW (STEEL)	ABA1011
	35	SCREW	ABA1024
	36	SCREW (STEEL)	ABA1047
	37	ROTARY KNOB M (PLS)	AAB7049
	38	HINGE BUTTON A (PLS)	AAD7162
	39	HINGE BUTTON B (PLS)	AAD7164
	40	HINGE BUTTON C (PLS)	AAD7166
NSP	41	VINYL SHEET	AHG7013

● PACKING



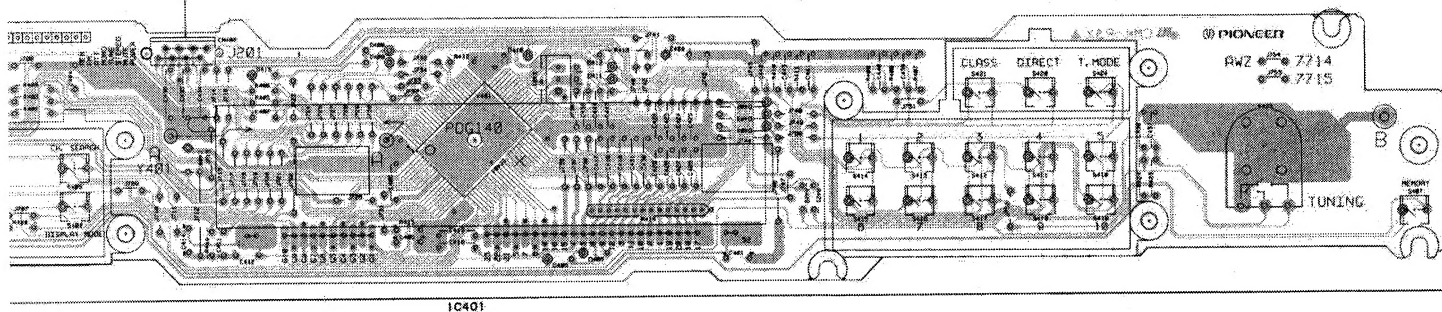
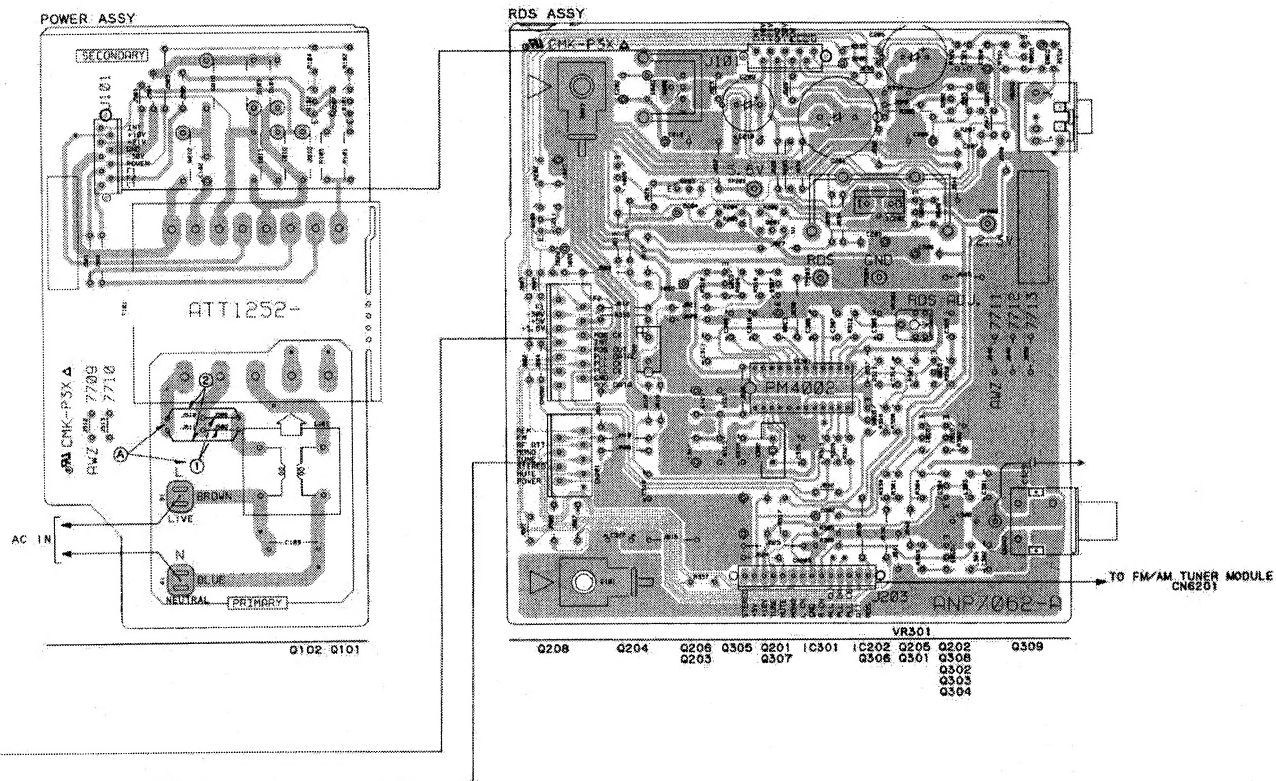
2. BLOCK DIAGRAM



*1: HEWLETT and HENROCK Types: ABA1005

NOTE: Screws adjacent to ▼ mark on product are used for disassembly.

● This diagram is viewed from the mounted parts side.





Q303, Q304:
MUTE

Q301, Q302: BUFFER

Q206:
+5.6V
REGULATOR

Q205:
+12.6V
SW

Q201:
+12.6V
SW
DRIVE

Q202:
+5.0V
REGULATOR

Q202:
+12.6V
REGULATOR

Q309:
CONTROL
SIGNAL
BUFFER

Q208:
AC CLK
WAVEFORMER

↗: FM Signal route
↘: AM Signal route

SCH-1

POWER ASSY

(AWZ7709:HEXK AND HBWXX TYPES)

(AWZ7710:HEWZXX AND HEWIXX TYPES)

Q101, Q102:
FL FILAMENT
POWER SW

AC POWER CORD
ADG113B
AC220-230V
50/60Hz
(HEXK, HEWZXX AND
HEWIXX TYPES)
ADG114B
AC230V 50/60Hz
(HBWXX TYPE)

- #1 HEWZXX, HEWIXX USE 2.2uH
#2 USE ONETIME_MICROPROCESSOR ONLY
#3 HEXK, HBWXX, HEWIXX ONLY USE
#4 HEWZXX, HEWIXX use 100kohm
#5 HEXK, HBWXX ONLY USE

△

Noted

1. Resistors

Indicated in ohm 1/8W - 5%
tolerance
unless otherwise noted
K=kohm, M=Mohm

2. Capacitors

Indicated in
capacity(uF)/voltage(v)
unless otherwise noted
Indication without voltage is 50v
except electrolytic capacitor.

CONTROL ASSY
(AWZ7714:HEXK AND
HBWXX TYPES)
(AWZ7715:HEWZXX AND
HEWIXX TYPES)

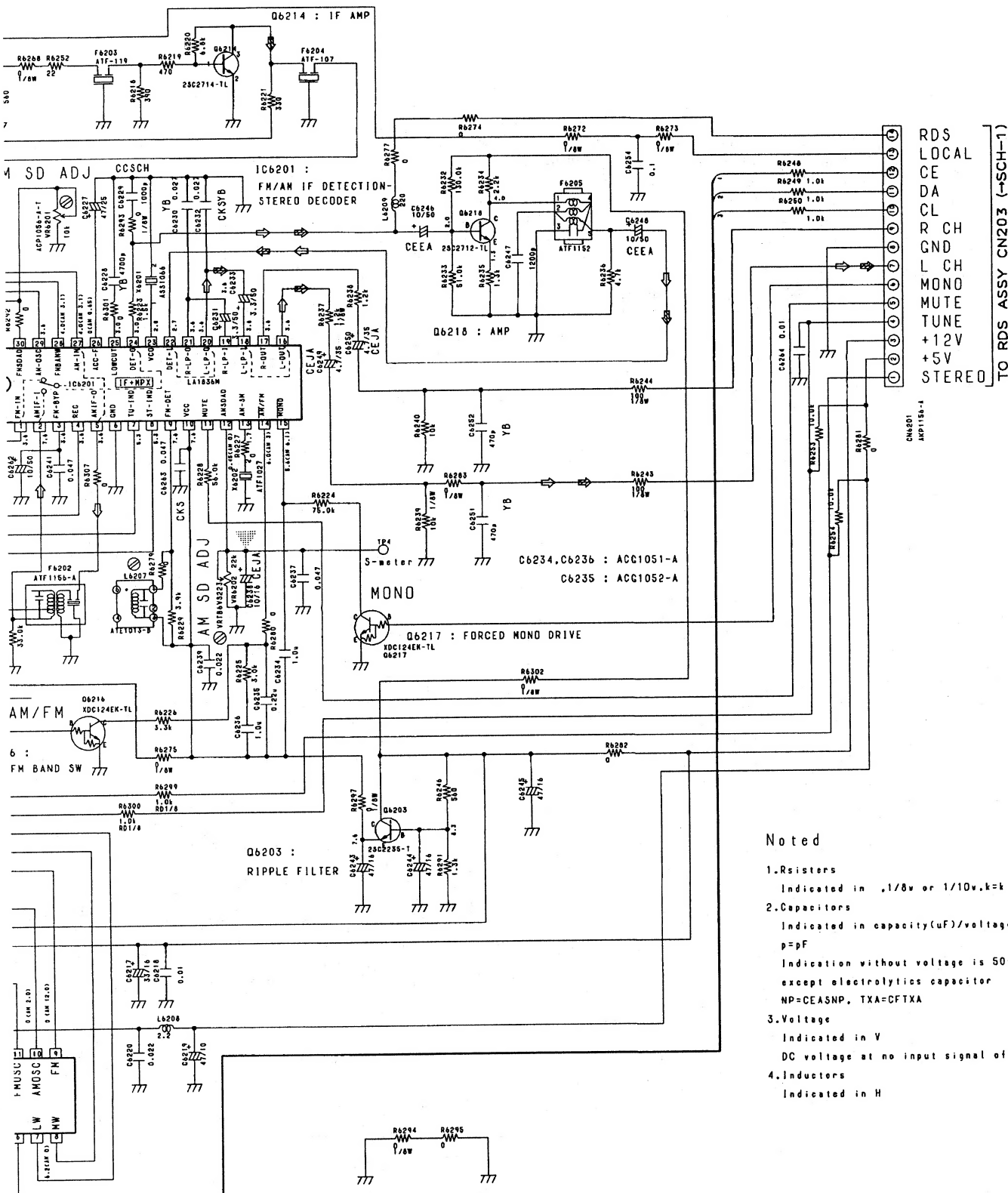
FM/AM TUNER MODULE (AXQ7040:HEXK AND HBWXK TYPES)



SCH-2

◇ : FM Signal route
 □ : AM Signal route

A



TO RDS ASSY CN203 (-SCH-1)

Noted

1. Resistors
Indicated in .1/8w or 1/10w, k=k
2. Capacitors
Indicated in capacity (uF)/voltage (V)
p=pF
Indication without voltage is 50v
except electrolytics capacitor
NP=CEASNP, TXA=CFXTA
3. Voltage
Indicated in V
DC voltage at no input signal of FM
4. Inductors
Indicated in H

B

C

D

E

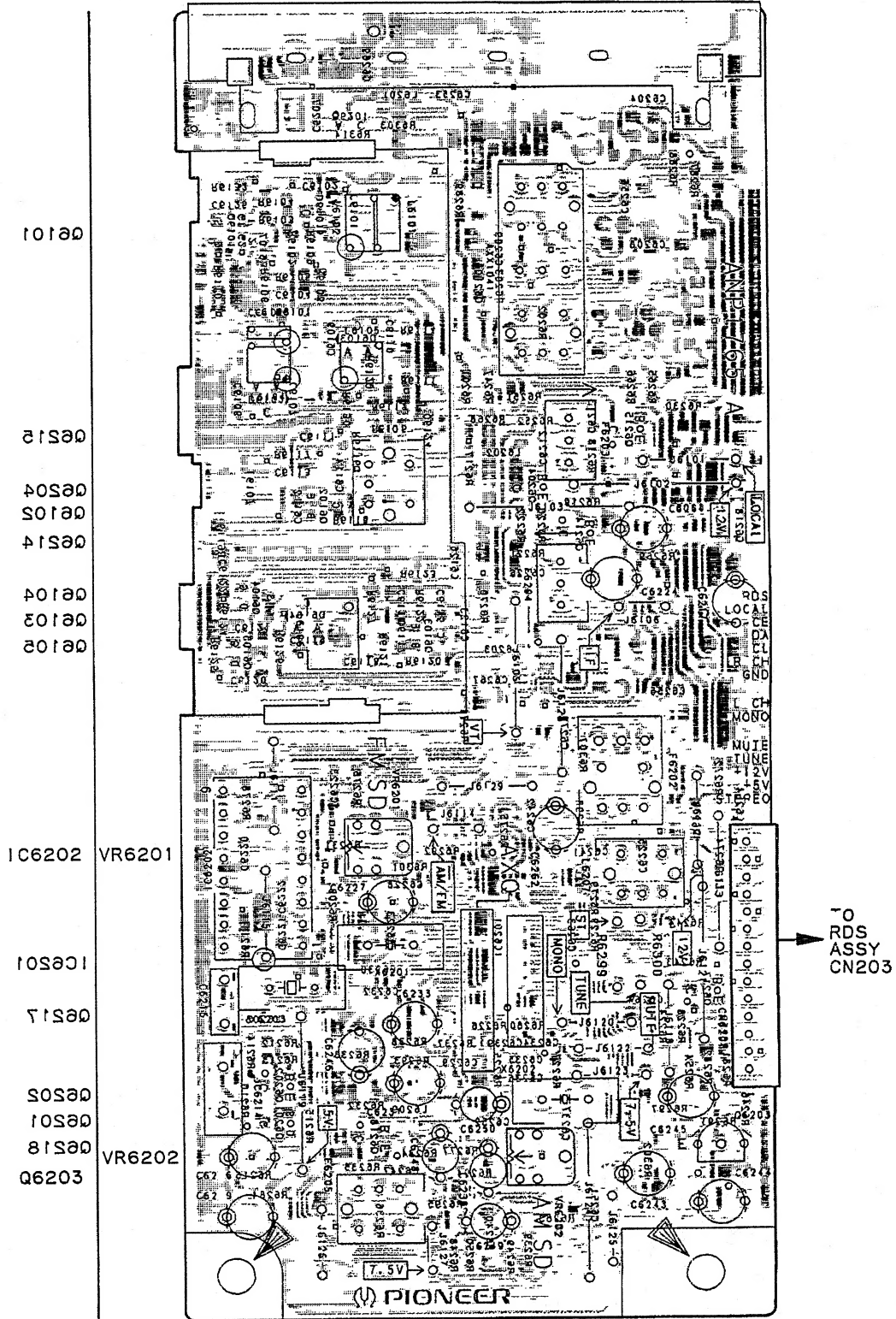
F

3.3 FM/AM TUNER MODULE (FOR HEWZXX AND HEWIXK TYPES)

● This diagram is viewed from the mounted parts side.

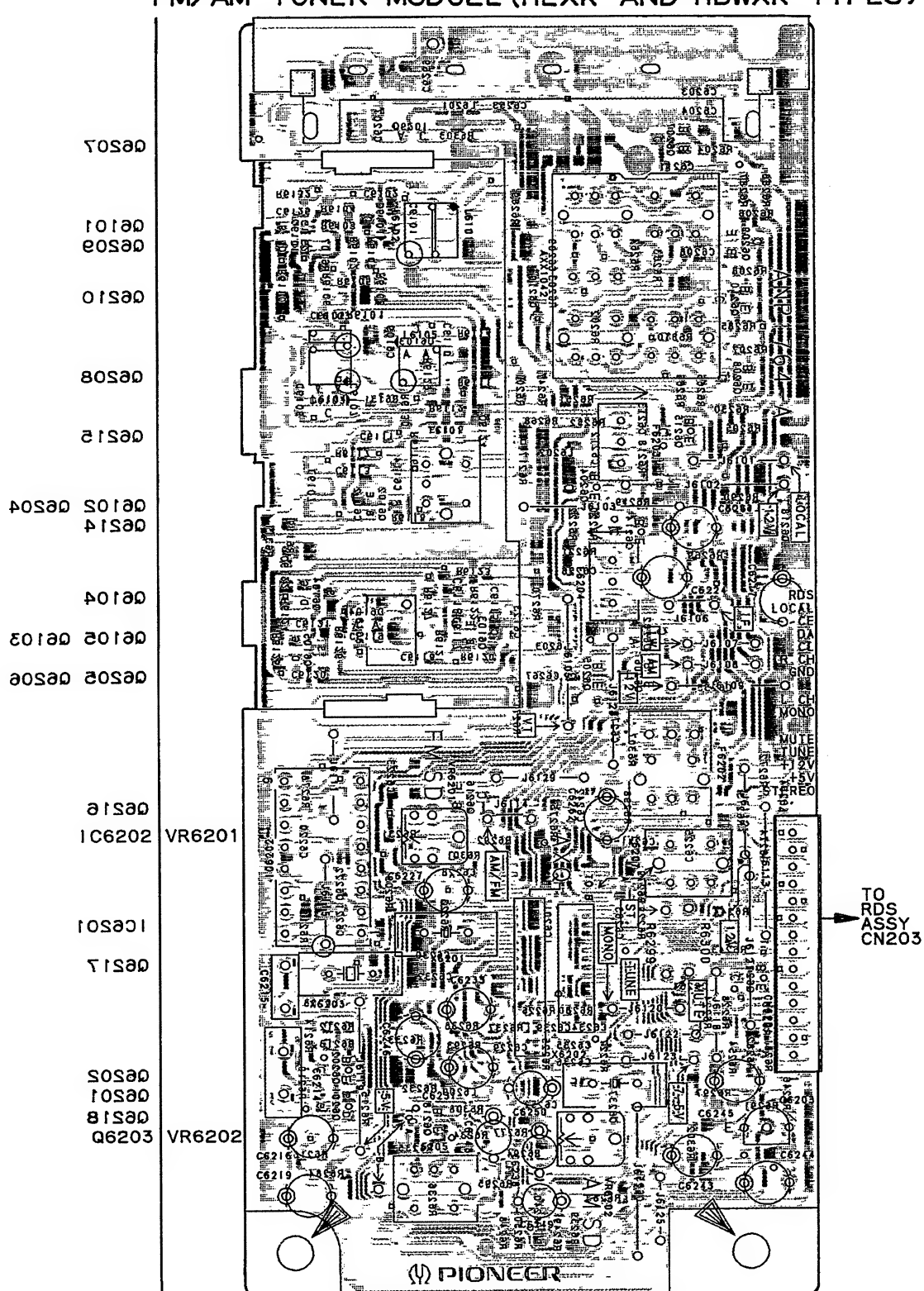
PCB-3

FM/AM TUNER MODULE (HEWIXK AND HEWZXX TYPES)



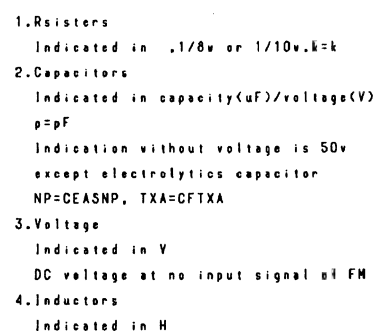
PCB-2

FM/AM TUNER MODULE (HEXK AND HBWXK TYPES)



1





**FM/AM TUNER MODULE
(FOR HEWZXX AND HEWXX TYPES)**

SCH-3

4. PCB PARTS LIST (for F-204RDS/HEXK)

NOTES:

- Parts marked by "NSP" are generally unavailable because they are not in our Master Spare Parts List.
- The Δ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.
- Parts marked by " " are not always kept in stock. Their delivery time may be longer than usual or they may be unavailable.
- When ordering resistors, first convert resistance values into code form as shown in the following examples.
Ex. 1 When there are 2 effective digits (any digit apart from 0), such as 560 ohms and 47k ohms (Tolerance is shown by J = 5%, and K = 10%).
560 Ω \rightarrow 56 $\times 10^1 \rightarrow$ 561 \rightarrow RD18PM561 J
47k Ω \rightarrow 47 $\times 10^3 \rightarrow$ 473 \rightarrow RD14PS473 J
0.5 Ω \rightarrow 0R5 \rightarrow RN2H0R5 K
1 Ω \rightarrow 010 \rightarrow RS1P010 K
Ex. 2 When there are 3 effective digits (such as in high precision metal film resistors).
5.62k Ω \rightarrow 562 $\times 10^1 \rightarrow$ 5621 \rightarrow RN14PC5621 F

Mark No.	Description	Parts No.	Mark No.	Description	Parts No.
LIST OF ASSEMBLIES					
NSP	TUNER ASSY				
	POWER ASSY				
	RDS ASSY				
	CONTROL ASSY				
FM/AM TUNER MODULE					
	D201	D204, D301, D303	1S252		
	D205		MTZJ30C		
	D206		MTZJ4.7B		
	D203		MTZJ6.2B		
COILS AND FILTERS					
	L303		LAU10J		
	L301, L302		LAU2R2J		
CAPACITORS					
	C322 (47nF/5.5)		ACH1135		
	C315, C316		CCCCH20J50		
	C210		CCCSL101J50		
	C201		CEAS100M50		
	C212, C313, C317		CEAS101M10		
	C207		CEAS101M35		
	C209		CEAS102M16		
	C204		CEAS222M35		
	C308		CEAS2R2M50		
	C202, C208, C320		CEAS470M25		
	C206		CEAS470M50		
	C205		CEAS471M50		
	C203		CEEA330M50		
	C319, C327		CKCYB102K50		
	C309, C310		CKCYB332K50		
	C301, C302		CKCYB392K50		
	C311, C312		CKCYB472K50		
	C307		CKCYF223Z50		
	C305		CKCYX223M25		
	C306		CKCYX473M25		
	C325		CKDYF103Z50		
	C211, C321		CKPUY101K50		
	C314, C318, C323		CKPUY103M16		
RESISTORS					
	R208		RD12PM102J		
	R203		RD14PM272J		
	VR301		RD18PM102J		
OTHERS					
	Other Resistors		RD18PM102J		
	SCREW		ABA-298		
	CN205 2P PIN JACK		AKB7010		
	CN204 JACK		AKN1006		
	CABLE HOLDER		AKT1023		
	CABLE HOLDER (14P)		AKT1086		
	X302 CRYSTAL RESONATOR (4.332MHz)		ASS7004		
	CN202 CONNECTOR(13P)		KPE15		
	CN201 CONNECTOR(8P)		KPE8		

LIST OF ASSEMBLIS					
NSP	TUNER ASSY				
	└─ POWER ASSY				
	└─ RDS ASSY				
	└─ CONTROL ASSY				
	FM/AM TUNER MODULE				
		D201	D204	D301	D303
		D205			
		D206			
		D203			
		COILS AND FILTERS			
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POWER ASSY	
S E M I C O N D U C T O R S	Q101 , Q102
	2SC2878
C A P A C I T O R S	
C O I L S , L O O Z	C322 (47mF/5.5)
	C315 , C316
C O I L S , L O O Z	C210
	C201
S E M I C O N D U C T O R S	C212 , C313 , C317
	C207
C A P A C I T O R S	
C O I L S , L O O Z	ACH1135
	CCCCH22QJ50
C O I L S , L O O Z	CCCSL101J50
	CEAS100M50
C O I L S , L O O Z	CEAS101M10
	CEAS101M35

55566	C209	CEAS102M16
	C204	CEAS222N35
ATF-163	C308	CEAS2F2M50
	C202 ,C208 ,C320	CEAS470M25
ATT1252	C206	CEAS470M50
	C105	CEAS471M50
ACG-009	C203	CEAS330M50
ACG-008		
C102 (0.047AC25)		
C101 (0.047AC25)		
C102 (0.047AC40)		
CAPACITORS		
T101		
TRANSFORMERS		
L101 (1mH)		
COILS AND FILTERS		
D101 -J106		

△	C103 (0.01μF/400V)	ACK105%	CKCYB102K50
RESISTORS	C102	CEAS470M50	C319, C327
	R101, R103	RD1/4PM010J	C309, C310
	Other Resistors	RD1/8PM□□□J	C301, C302
			C311, C312
OTHERS			C307
	CABLE HOLDER	AKT1023	C305
			C306
			CKCYX473M25

RDS ASS'Y		RESISTORS		SEMI CONDUCTORS	
CKDYF103Z50	C325	C211 ,C321	R206	IC202	IC301
CKPUYB101K50	C314 ,C318 ,C323	C319 ,C327	R203	IC201	IC302
CKPUYY103M16			VR301		

5. ADJUSTMENTS

■ AM Tuner Section

- Set the mode selector to AM BAND.
- Connect the wiring as shown in Fig. 1.

Step No.	Adjustment Title	AM SG(400Hz, 30% Mod.)		Reception Frequency Display	Adjustment Location	Specifications
		Frequency(kHz)	Level(dBμV/m)			
1	TUNED IND. Lighting level	999	47 ± 2	999kHz	VR6202	Adjust so that the indicator of TUNED IND. starts to light up.

■ FM Tuner Section

- Set the mode selector to FM BAND.
- Connect the wiring as shown in Fig. 1.

Step No.	Adjustment Title	FM SG(1kHz, ±75kHz dev.)		Reception Frequency Display	Adjustment Location	Specifications
		Frequency(MHz)	Level(dBμV)			
1	Center Adjustment	98 Non modulation	80 or more	98MHz	L6207	Adjust so that the DC voltage between Pin 4 and Pin 28 (or ⊕ leads of C6224 and C6261) of IC 6201 becomes 0V ± 50mV.
2	Front End Sensitivity	98	10-30	98MHz	L6104 *1 L6105 L6102 T6101	Adjust so that the DC voltage between Pin 12 (or ⊕ lead of C6238) of IC6201 (S-meter) and GND becomes at maximum level.
3	TUNED IND. Lighting Level	98	15 ± 2	98MHz	VR6201	Adjust so that the indicator of TUNED IND. starts to light up.
4	SK Level Adjustment	88 EXTERNAL*2 (RDS SG)	60	88MHz (RF ATT ON)	VR301	Adjust so that the output level 57kHz between TP 203 and GND becomes maximum.

*1 : HEWZXX and HEWJXX types only.

*2 : RDS SG (AUDIO, PILOT, RDS, BK and DK : OFF, SK : ON)

Notes:

- Before adjusting, make sure there is no gap between L6101 and L6102. If there is a gap between them, bring them into contact with each other first, and then make adjustments.
- Make indicator adjustments in order of AM → FM.

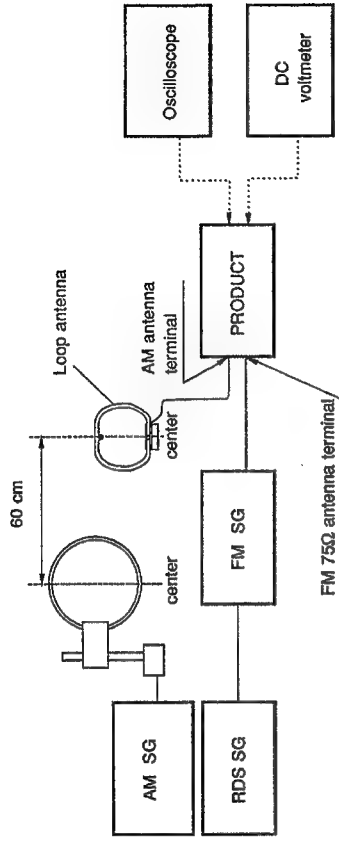


Fig. 1 FM and AM adjustment wiring diagram

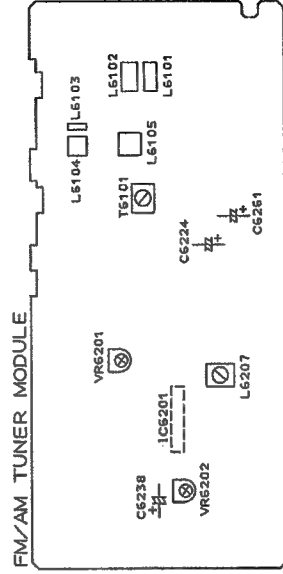


Fig. 2 Adjustment Points

6. FL INFORMATION

● AAV1192

PIN LOCATION

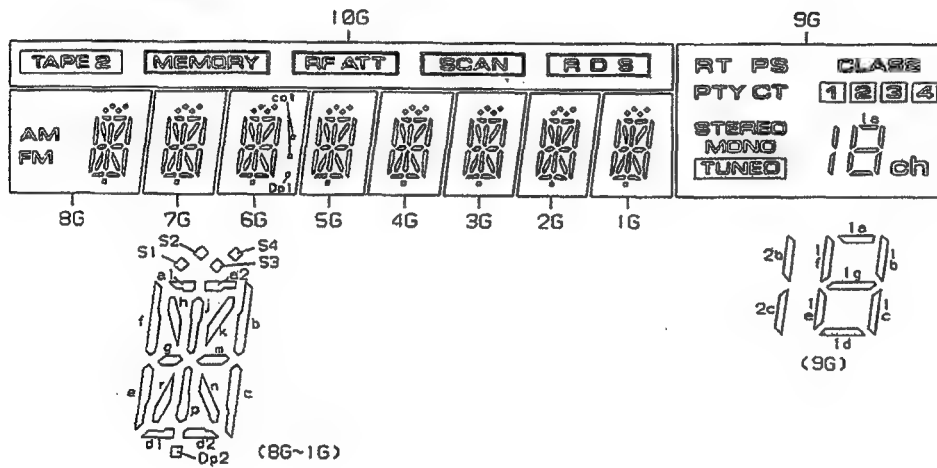


PIN CONNECTION

PIN NO.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CONNECTION	F	F	N	N	0	9	8	7	6	5	4	3	2	1	N	N	N	N	N	N	2	2	2
	1	1	P	P	G	G	G	G	G	G	G	G	X	X	X	X	X	X	X	X	3	2	1

NOTE 1) F1, F2 --- Filament
 2) NP ----- No pin
 3) NX ----- No extend pin
 4) DL ----- Datum Line
 5) 1G~10G --- Grid

GRID ASSIGNMENT



ANODE CONNECTION

	10G	9G	8G	7G	6G	5G	4G	3G	2G	1G
P1	-	TUNED	S1	S1	S1	S1	S1	S1	S1	S1
P2	-	STEREO	S2	S2	S2	S2	S2	S2	S2	S2
P3	-	②	S4	S4	S4	S4	S4	S4	S4	S4
P4	-	③	S3	S3	S3	S3	S3	S3	S3	S3
P5	MEMORY	MONO	a1	a1	a1	a1	a1	a1	a1	a1
P6	RF ATT	④	a2	a2	a2	a2	a2	a2	a2	a2
P7	-	CLASS	h	h	h	h	h	h	h	h
P8	-	①	j	j	j	j	j	j	j	j
P9	TAPE 2	2b	b	b	b	b	b	b	b	b
P10	-	RT	k	k	k	k	k	k	k	k
P11	-	1a	g	g	g	g	g	g	g	g
P12	-	1b	f	f	f	f	f	f	f	f
P13	-	2c	m	m	m	m	m	m	m	m
P14	SCAN	CT	c	c	c	c	c	c	c	c
P15	-	PTY	p	p	p	p	p	p	p	p
P16	-	PS	r	r	r	r	r	r	r	r
P17	-	1g	n	n	n	n	n	n	n	n
P18	-	1e	d1	d1	d1	d1	d1	d1	d1	d1
P19	-	1c	e	e	e	e	e	e	e	e
P20	RDS	1d	d2	d2	d2	d2	d2	d2	d2	d2
P21	-	1f	Dp2	Dp2	Dp2	Dp2	Dp2	Dp2	Dp2	Dp2
P22	-	ch	AM	-	col	-	-	-	-	-
P23	-	-	FM	-	Dp1	-	-	-	-	-

7. IC INFORMATION



● The information shown in the list is basic information and may not correspond exactly to that shown in the schematic diagrams.

■ PDG140A (IC401)

● CONTROL MICROCOMPUTER

● Pin Function

No.	NAME	I/O	FUNCTION	ACT
1	RDS DATA	I	Data from LC7073 input	—
2	REMOCON	I	REMOCON signal input	—
3	NOT USED	I	GND standard electric potential	—
4	NC	O	Not used	—
5	FM	O	FM BAND select output	H
6	RF ATT	O	RF ATT ON/OFF output	H
7	MONO	O	FM MONO output	H
8	TUNE	I	TUNE indicator signal input	L
9	STEREO	I	STEREO indicator signal input	L
10	NC	O	Not used	—
11	DIRECT	O	DIRECT ON/OFF (Receiver only) *1	H
12	LW be or not	I	L: LW not being H: LW being (Tuner only) *1	—
13	LOUDNESS	O	LOUDNESS ON/OFF (Receiver only) *1	H
14	K10	I	KEYSCAN input 0	H
15	K11	I	KEYSCAN input 1	H
16	K12	I	KEYSCAN input 2	H
17	K13	I	KEYSCAN input 3	H
18	K14	I	KEYSCAN input 4	H
19	RECEIVER/ TUNER	I	Change-over of RECEIVER/ TUNER (L: Tuner H: Receiver)	—
20	K15	I	KEYSCAN input 5 (Receiver only) *1	H
21	K16	I	KEYSCAN input 6 (Receiver only) *1	H
22	REMOCON be or not	I	Change-over of destination (Receiver only) *1	H
23	NC		Not used	—

No.	NAME	I/O	FUNCTION	ACT
24	FUNCTION ST	O	Change-over of FUNCTION IC (TC9164N) Strobe (Receiver only) *1	
25	MUTE	O	TUNER, MUTE control output	H
26	VOL UP	O	VOLUME UP output	H
27	VOL DOWN	O	VOLUME DOWN output	H
28	Rotary input	O	Rotary encoder input A (Tuner only) *1	H
29	Rotary input	O	Rotary encoder input B (Tuner only) *1	H
30	RST	I	Reset input	
31	EX' TAL		Connecting 7.7 MHz oscillation crystal between pins	—
32	X' TAL			—
33	Vss		GND standard electric potential	—
34	NC		Not used	—
35	FL AC	O	FC AC ON/OFF	L
36	POWER	O	POWER ON/OFF	H
37	Seg 17	O	Segment indication output	H
38	Seg 18	O		
39	Seg 20	O		
40	Seg 19	O		
41	Seg 1	O		
42	Seg 2	O		
43	Seg 10	O		
44	Seg 11	O		
45	Seg 3	O		
46	Seg 12	O		
47	K00/S9	O	Segment indication output / KEYSCAN output	H

No.	NAME	I/O	FUNCTION	ACT
48	K01/S8	O	Segment indication output / KEYSCAN output	H
49	K02/S13	O		
50	K03/S4	O		
51	K04/S15	O		
52	Seg 16	O	Segment indication output	H
53	Seg 14	O		
54	Seg 6	O		
55	Seg 7	O		
56	Seg 5	O		
57	Seg 21	O		
58	Seg 22	O		
59	Seg 23	O		
60	Seg 24	O	Segment indication output (Receiver only) *1	H
61	R: G 1 T: G 10	O	Grid FL indication output	H
62	R: G 2 T: G 9	O		
63	R: G 3 T: G 8	O		
64	R: G 4 T: G 7	O		
65	R: G 5 T: G 6	O		
66	R: G 6 T: G 1	O		
67	R: G 7 T: G 2	O		
68	R: G 8 T: G 3	O		
69	R: G 9 T: G 4	O		
70	R: G 10 T: G 5	O		

No.	NAME	I/O	FUNCTION	ACT
71	-VFDP		Electric potential for EDP (-30 V)	—
72	VDD		+5 V Power source input	—
73	NC		+5 V Power source input	—
74	TEST	I	TEST MODE judgement input	H
75	PLL_DT	O	PLL communication data output (LM7001) and change-over function (TC9164N)	—
76	PLL_CK	O	PLL communication clock output (LM7001) and change-over function (TC9164N)	—
77	PLL_CE	O	PLL communication chip enable output (LM7001)	H
78	RDS_CK	I	Each bit from LC7073 synchronizing clock input	—
79	AC	I	WAKE - UP AC pulse input	—
80	RDS_OUT	I	Judging RDS signals output or not	L

*1 : Functions will be changed according to setting (L or H) of Pin 19.

8. FOR HBWXK, HEWZXK AND HEWIXK TYPES

NOTES:

- Parts marked by "NSP" are generally unavailable because they are not in our Master Spare Parts List.
- The \triangle mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.
- Parts marked by "●" are not always kept in stock. Their delivery time may be longer than usual or they may be unavailable.
- When ordering resistors, first convert resistance values into code form as shown in the following examples.

Ex.1 When there are 2 effective digits (any digit apart from 0), such as 560 ohms and 47k ohms (Tolerance is shown by J = 5%, and K = 10%).

560 Ω \rightarrow 56 $\times 10^1$ \rightarrow 561 ----- RD1/8PM $\boxed{5}\boxed{6}\boxed{1}$ J

47k Ω \rightarrow 47 $\times 10^3$ \rightarrow 473 ----- RD1/4PS $\boxed{4}\boxed{7}\boxed{3}$ J

0.5 Ω \rightarrow 0R5 ----- RN2H $\boxed{0}\boxed{R}\boxed{5}$ K

1 Ω \rightarrow 010 ----- RS1P $\boxed{0}\boxed{1}\boxed{0}$ K

Ex.2 When there are 3 effective digits (such as in high precision metal film resistors).

5.62k Ω \rightarrow 562 $\times 10^1$ \rightarrow 5621 ----- RN1/4PC 5 6 2 1 F

HBWXK, HEWZXK, HEWIXK and HEXK have the same construction except for the following:

Mark	Symbol & Description	Part No.				Remarks
		HEXK	HBWXK	HEWZXK	HEWIXK	
NSP	TUNER ASSY POWER ASSY RDS ASSY CONTROL ASSY FM/AM TUNER MODUL	AWE7009 AWZ7709 AWZ7711 AWZ7714 AXQ7040	AWE7009 AWZ7709 AWZ7711 AWZ7714 AXQ7040	AWE7010 AWZ7710 AWZ7712 AWZ7715 AXQ3226	AWE7011 AWZ7710 AWZ7713 AWZ7715 AXQ3226	
\triangle \triangle	C2 Ceramic capacitor AC power cord Fuse (5A/250V) Operating instructions (English, French, German, Swedish, Italian, Dutch, Spanish, Portuguese)	CKDYB102K50 ADG1138 Not used ARE7031	CKDYB102K50 ADG1148 AEK1046 Not used	Not used ADG1138 Not used Not used	Not used ADG1138 Not used Not used	With AC power cord
	Operating instructions (English) Operating instructions (German) Operating instructions (Italian) Air cap Packing case	Not used Not used Not used Not used AHD7133	ARB7032 Not used Not used AHG1203 AHD7134	Not used ARC7051 Not used Not used AHD7133	Not used Not used ARC7052 Not used AHD7133	For AC power cord

● POWER ASSY

Although AWZ7715 and AWZ7714 are different in part number, they have the same service parts.

● RDS ASSY

AWZ7712, AWZ7713 and AWZ7711 have the same construction except for the following:

Mark	Symbol & Description	Part No.			Remarks
		AWZ7711	AWZ7712	AWZ7713	
	L303 R305, R306	LAU010J RD1/8PM332J	LAU2R2J Not used	LAU2R2J RD1/8PM332J	

● CONTROL ASSY

AWZ7715 and AWZ7714 have the same construction except for the following:

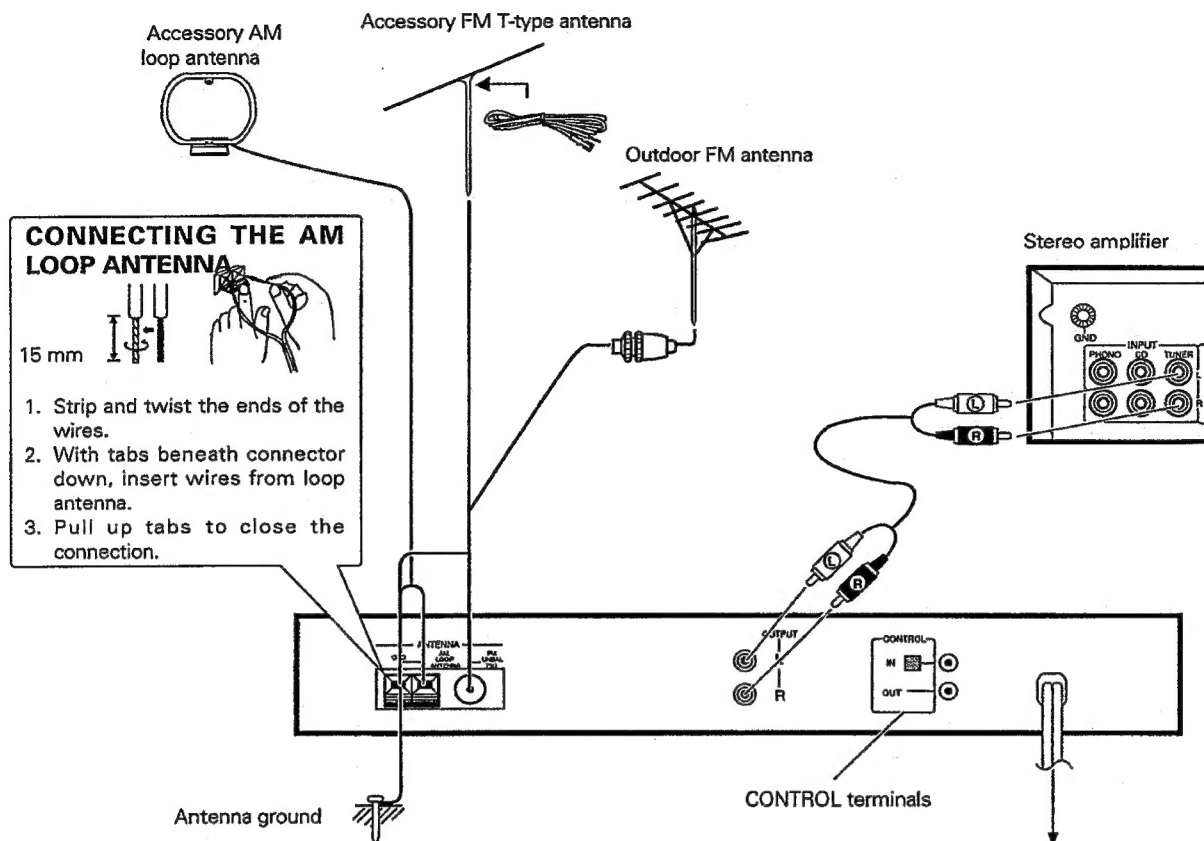
Mark	Symbol & Description	Part No.		Remarks
		AWZ7714	AWZ7715	
	R419 R420	RD1/8PM473J RD1/8PM222J	RD1/8PM104J Not used	

● FM/AM TUNER MODUL

AXQ3226 and AXQ7040 have the same construction except for the following:

Mark	Symbol & Description	Part No.		Remarks
		AXQ7040	AXQ3226	
	Q6205, Q6206 Q6207 - Q6209, Q6210, Q6216 D6202 C6115 C6126	XDA124EK XDC124EK 1SS184 CKSQYB103K50 Not used	Not used Not used Not used CKSQYB102K50 CKSQYB102K50	
	C6203 C6211 C6216, C6217 C6219 C6231, C6233	CCSQCH221J50 CKSQYF473Z50 CEAS330M25 CEAS470M25 CEAS3R3M50	Not used Not used CEAS330M16 CEAS470M10 CEAS100M50	
	C6243 - C6245 C6256 R6204 - R6206 R6207, R6208 R6263	CEAS470M25 Not used RS1/10S103J RS1/10S102J RS1/8S000J	CEAS470M16 CKSQYF223Z50 Not used Not used Not used	
	R6264, R6285, R6286, R6310 R6276 R6288 AM RF tuning block	RS1/10S000J Not used Not used AXX1042	Not used RS1/8S000J RS1/10S000J AXX1041	

9. CONNECTIONS



Antenna ground

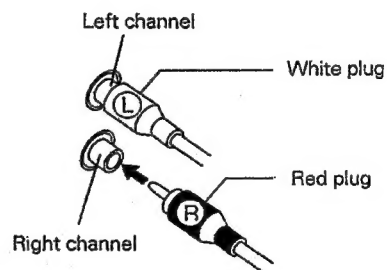
Although grounding is not always necessary for reception, it is recommended for protection against damage from lightning if an outdoor FM antenna is used. It is also recommended for reducing noise and hum.

CAUTION:

Never make the ground connection to a gas pipe as sparks can cause the gas to ignite.

Pin plug connecting cord

- Connect the white plug to the white terminal (L) and the red plug to the red terminal (R).
- Make sure that the connections are secure.

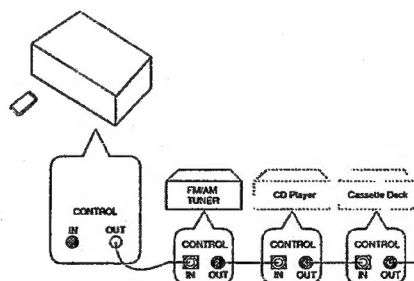


CONTROL Terminals

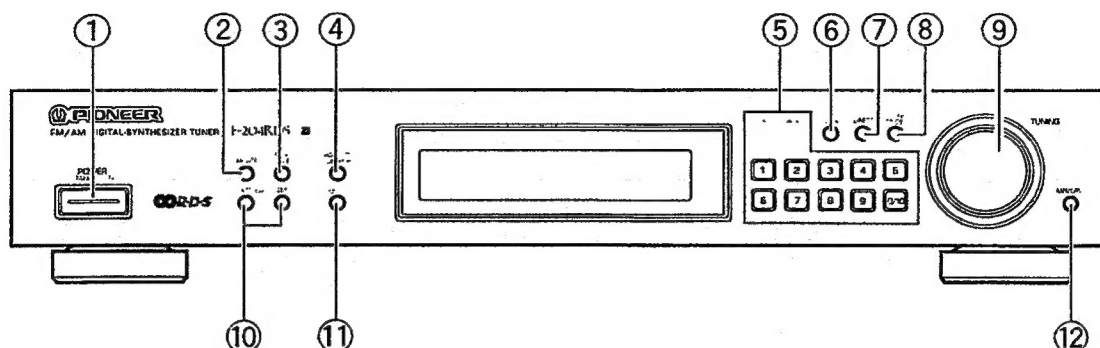
When using together with a Pioneer component bearing the mark, connect the CONTROL IN terminal on the rear panel of the tuner to the CONTROL OUT terminal on the component using the supplied control cord. This will enable the tuner to be controlled from a distance with the remote control unit supplied with the component.

When this feature is not used, connection is not necessary.

- For instructions regarding connection and operation, please refer to the operating instruction manual of your stereo component.



10. FRONT PANEL FACILITIES



① POWER (STANDBY/ON) switch

This is the switch for electric power.

ON When set to ON position, power is supplied and the unit becomes operational.

STANDBY When set to STANDBY position, the main power flow is cut and the unit is no longer fully operational. A minute flow of power feeds the unit to maintain operation readiness.

NOTE:

- The memory will be backed up so long as the power cord is unplugged.
- If the power cord is unplugged, the memory will be retained for several days.
- When not using the unit for a long period, disconnect the power cord.

② RF ATT button

Set this button to on when receiving strong FM signals (nearby stations) to reduce sound distortion (RF ATT indicator lights).

Normally, this button should be set to off.

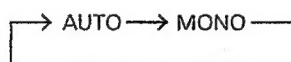
This button does not affect AM reception.

NOTE:

This button's status is preset for each station in station memory.

③ MPX (multiplex) MODE button

Mode changes as follows each time this button is pressed



This button does not affect AM reception.

AUTO:

"AUTO" is not displayed.

Normally leave in this mode for reception. When a stereo FM broadcast is received, it will be automatically reproduced in stereo sound and the STEREO indicator lights up.

NOTE:

When the signal level is too weak for reception, sound output is automatically muted.

MONO:

MONO indicator lights up.

To receive stereo broadcasts in monaural.

If there is too much noise during stereo reception of a weak signal, you can reduce the level of noise by switching to MONO.

NOTE:

This button's status is preset for each station in station memory.

④ CHARACTER/SEARCH button

When receiving an AM broadcast, or when in the FM RT or PS mode:

Press this button, "INPUT" is displayed, and the mode switches to manual station name input.

When in the FM PTY mode:

Press this button, "SEARCH" is displayed, and the mode switches to program type search.

⑤ STATION CALL buttons

Use these buttons to preset stations and to receive the already preset stations.

These are also used when performing direct access tuning.

⑥ CLASS button

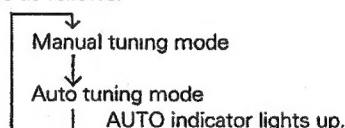
Use to switch between preset memory classes 1 to 3. In each class, 10 stations can be memorized using the STATION CALL buttons, enabling a total of 30 stations to be memorized.

⑦ DIRECT button

When this button is pressed, the STATION CALL buttons function as ten-key number buttons for direct input of the desired reception frequency. Press again to cancel this mode.

⑧ TUNING MODE button

Each time you press this button, the TUNING knob's function changes as follows.



- Auto Tuning is not possible on the LW band.

⑨ TUNING knob

Use for tuning. To raise the frequency, turn in a clockwise direction; to lower the frequency, turn counterclockwise.

AM: For MW, frequency changes in 9 kHz steps.

For LW, frequency changes in 1 kHz steps.

FM: Frequency changes in 50kHz steps.

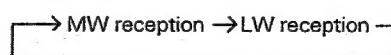
In the Station Name input mode, PTY Search mode, the TUNING knob is used to select characters and program types.

⑩ BAND selector buttons

These buttons are used to select either FM or AM reception.

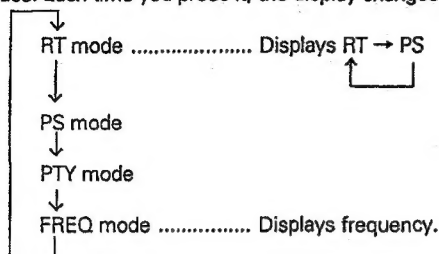
FM: Press to receive FM broadcasts.

AM: The bands change alternately as follows, each time this button is pressed.

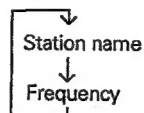


⑪ **DISPLAY MODE button**

Use only during FM reception. Use this to switch between display modes. Each time you press it, the display changes as follows.



When receiving AM, valid only when the station name is memorized.



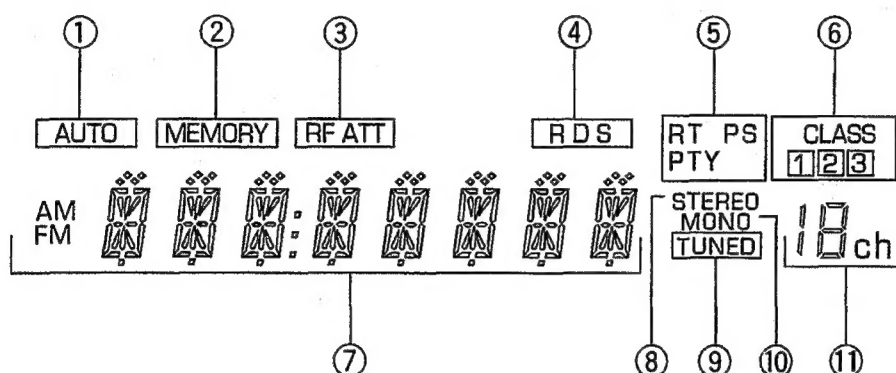
Does not show other displays. When no station name is memorized, the DISPLAY MODE button becomes invalid.

⑫ **MEMORY button**

Use to preset stations.

This is also used for FM or AM broadcast manual station name character selection.

● **DISPLAY**



① **AUTO indicator**

Lights during auto tuning mode.

② **MEMORY indicator**

③ **RF ATT indicator**

Stays lit while RF ATT button is on.

④ **RDS indicator**

Lights when an RDS broadcast is received.

⑤ **RT, PS, PTY indicator**

One of these lights to indicate the selected display mode (selected by the DISPLAY MODE button).

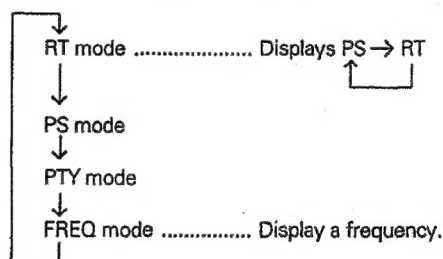
⑥ **CLASS 1, 2, 3 indicator**

Shows the class selected by the CLASS button. The current CLASS is displayed.

⑦ **Frequency and character display section**

Band and frequency data is displayed.

During FM reception, the display changes as follows each time the DISPLAY MODE button is pressed.



⑧ **STEREO indicator**

Lights up when a stereo broadcast is received (the indicator does not light when the MPX MODE button is set to MONO).

⑨ **TUNED indicator**

Lights when a broadcast is received.

⑩ **MONO indicator**

Stays lit while MPX MODE button is set to MONO.

⑪ **Station display section**

When STATION CALL buttons are pressed, it will show the corresponding station number.

11. SPECIFICATIONS

FM Tuner Section

Frequency Range	87.5 MHz to 108 MHz
Usable Sensitivity	
NORMAL	Mono: 12.7 dBf, IHF(1.2 μ V/75 Ω)
50 dB Quieting Sensitivity	
NORMAL	Mono: 18.0 dBf, IHF (2.2 μ V/75 Ω)
	Stereo: 38.3 dBf, IHF (22.6 μ V/75 Ω)
Sensitivity (DIN)	
NORMAL	Mono: 1.0 μ V/75 Ω
	Stereo: 50 μ V/75 Ω
Signal-to-Noise Ratio	Mono: 76 dB (at 80 dBf)
	Stereo: 72 dB (at 80 dBf)
Signal-to-Noise Ratio (DIN)	Mono: 62 dB
	Stereo: 58 dB
Distortion (at 80 dBf)	
NARROW	Mono: 0.5 % (1 kHz)
	Stereo: 0.6 % (1 kHz)
Alternate Channel Selectivity	70 dB (400 kHz)
Stereo Separation	40 dB (1 kHz)
Frequency Response	± 1 dB (30 Hz to 15 kHz)
Image Response Ratio	80 dB
IF Response Ratio	90 dB
Antenna Input	75 Ω unbalanced

AM (MW) Tuner Section

Frequency Range	531 kHz to 1,602 kHz (Step 9 kHz)
Sensitivity (IHF, Loop antenna)	350 μ V/m
Selectivity	30 dB
Signal-to-Noise Ratio	50 dB
Image Response Ratio	40 dB
IF Response Ratio	50 dB
Antenna	Loop Antenna

AM (LW) Tuner Section

Frequency Range	153 kHz to 281 kHz
Sensitivity (IHF, Loop antenna)	1,000 μ V/m
Selectivity	30 dB
Signal-to-Noise Ratio	50 dB
Image Response Ratio	40 dB
IF Response Ratio	50 dB
Antenna	Loop Antenna

Audio Section

Output (Level/Impedance)	
FM (100 % MOD)	650 mV/2.5 k Ω
AM (30 % MOD)	150 mV/2.5k Ω

Miscellaneous

Power Requirements	AC 230 Volts~, 50/60 Hz
Power Consumption	15 W
Dimensions	420 (W) x 75 (H) x 292.9 (D) mm
Weight (without package)	2.7 kg

Furnished Parts

FM T-type Antenna	1
AM Loop Antenna	1
Connecting Cord with Pin Plugs	1
Control Cord	1
Operating Instructions	1

NOTE:

Specifications and design are subject to possible modifications without notice, due to improvements.